

SEQUENCE LISTING

<110> Splawski, Igor
Keating, Mark T.

<120> ALTERATIONS IN THE LONG QT SYNDROME GENES KVLQT1 AND
SCN5A AND METHODS FOR DETECTING SAME

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<140> Not yet assigned

<141> 2000-08-09

<150> 60/190,057

<151> 2000-03-17

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<170> PatentIn Ver. 2.0

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acc tgg gat ttc tgc tgt ggt ctc ctg cgg cac cgc cct cag aag ccc Thr Trp Asp Phe Cys Cys Gly Leu Leu Arg His Arg Pro Gln Lys Pro 980 985 990	2976
gca gcc ctt gcc gcc cag ggc cag ctg ccc agc tgc att gcc acc ccc Ala Ala Leu Ala Ala Gln Gly Gln Leu Pro Ser Cys Ile Ala Thr Pro 995 1000 1005	3024
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Trp	Asp	Gly	Leu	Leu	Ser	Pro	Ile	Leu	Asn	Thr	Gly	Pro	Pro	Tyr	Cys	
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Pro	Met	Val	Ser	Gly	Asp	Arg	Ile	His	Cys	Met	Asp	Ile	Leu	Phe	Ala	
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Phe	Thr	Lys	Arg	Val	Leu	Gly	Glu	Ser	Gly	Glu	Met	Asp	Ala	Leu	Lys	
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 Glu Asp Leu Asp Pro Phe Tyr Ser Thr Gln Lys Thr Phe Ile Val Leu
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 Asn Lys Gly Lys Thr Ile Phe Arg Phe Ser Ala Thr Asn Ala Leu Tyr
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 Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Thr Leu Ile Lys Ile Ile
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 1075 1080 1085
 Pro Pro Asp Ser Arg Thr Trp Ser Gln Val Ser Ala Thr Ala Ser Ser
 1090 1095 1100
 Glu Ala Glu Ala Ser Ala Ser Gln Ala Asp Trp Arg Gln Gln Trp Lys
 1105 1110 1115 1120
 Ala Glu Pro Gln Ala Pro Gly Cys Gly Glu Thr Pro Glu Asp Ser Cys
 1125 1130 1135

Ser Glu Gly Ser Thr Ala Asp Met Thr Asn Thr Ala Glu Leu Leu Glu
 1140 1145 1150
 Gln Ile Pro Asp Leu Gly Gln Asp Val Lys Asp Pro Glu Asp Cys Phe
 1155 1160 1165
 Thr Glu Gly Cys Val Arg Arg Cys Pro Cys Cys Ala Val Asp Thr Thr
 1170 1175 1180
 Gln Ala Pro Gly Lys Val Trp Trp Arg Leu Arg Lys Thr Cys Tyr His
 1185 1190 1195 1200
 Ile Val Glu His Ser Trp Phe Glu Thr Phe Ile Ile Phe Met Ile Leu
 1205 1210 1215
 Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Leu Glu Glu Arg
 1220 1225 1230
 Lys Thr Ile Lys Val Leu Leu Glu Tyr Ala Asp Lys Met Phe Thr Tyr
 1235 1240 1245
 Val Phe Val Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Phe Lys
 1250 1255 1260
 Lys Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp
 1265 1270 1275 1280
 Val Ser Leu Val Ser Leu Val Ala Asn Thr Leu Gly Phe Ala Glu Met
 1285 1290 1295
 Gly Pro Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro Leu Arg
 1300 1305 1310
 Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Val Asn Ala Leu Val
 1315 1320 1325
 Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys Leu Ile Phe
 1330 1335 1340
 Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala Gly Lys Phe
 1345 1350 1355 1360
 Gly Arg Cys Ile Asn Gln Thr Glu Gly Asp Leu Pro Leu Asn Tyr Thr
 1365 1370 1375
 Ile Val Asn Asn Lys Ser Gln Cys Glu Ser Leu Asn Leu Thr Gly Glu
 1380 1385 1390
 Leu Tyr Trp Thr Lys Val Lys Val Asn Phe Asp Asn Val Gly Ala Gly
 1395 1400 1405
 Tyr Leu Ala Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile
 1410 1415 1420
 Met Tyr Ala Ala Val Asp Ser Arg Gly Tyr Glu Glu Gln Pro Gln Trp
 1425 1430 1435 1440
 Glu Tyr Asn Leu Tyr Met Tyr Ile Tyr Phe Val Ile Phe Ile Ile Phe
 1445 1450 1455
 Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn
 1460 1465 1470

Phe	Asn	Gln	Gln	Lys	Lys	Lys	Leu	Gly	Gly	Gln	Asp	Ile	Phe	Met	Thr
1475						1480			1485						
Glu	Glu	Gln	Lys	Lys	Tyr	Tyr	Asn	Ala	Met	Lys	Lys	Leu	Gly	Ser	Lys
1490						1495			1500						
Lys	Pro	Gln	Lys	Pro	Ile	Pro	Arg	Pro	Leu	Asn	Lys	Tyr	Gln	Gly	Phe
1505						1510			1515			1520			
Ile	Phe	Asp	Ile	Val	Thr	Lys	Gln	Ala	Phe	Asp	Val	Thr	Ile	Met	Phe
			1525						1530			1535			
Leu	Ile	Cys	Leu	Asn	Met	Val	Thr	Met	Met	Val	Glu	Thr	Asp	Asp	Gln
			1540			1545						1550			
Ser	Pro	Glu	Lys	Ile	Asn	Ile	Leu	Ala	Lys	Ile	Asn	Leu	Leu	Phe	Val
1555						1560						1565			
Ala	Ile	Phe	Thr	Gly	Glu	Cys	Ile	Val	Lys	Leu	Ala	Ala	Leu	Arg	His
1570						1575						1580			
Tyr	Tyr	Phe	Thr	Asn	Ser	Trp	Asn	Ile	Phe	Asp	Phe	Val	Val	Val	Ile
1585						1590			1595			1600			
Leu	Ser	Ile	Val	Gly	Thr	Val	Leu	Ser	Asp	Ile	Ile	Gln	Lys	Tyr	Phe
			1605						1610			1615			
Phe	Ser	Pro	Thr	Leu	Phe	Arg	Val	Ile	Arg	Leu	Ala	Arg	Ile	Gly	Arg
			1620			1625						1630			
Ile	Leu	Arg	Leu	Ile	Arg	Gly	Ala	Lys	Gly	Ile	Arg	Thr	Leu	Leu	Phe
1635						1640						1645			
Ala	Leu	Met	Met	Ser	Leu	Pro	Ala	Leu	Phe	Asn	Ile	Gly	Leu	Leu	Leu
1650						1655			1660						
Phe	Leu	Val	Met	Phe	Ile	Tyr	Ser	Ile	Phe	Gly	Met	Ala	Asn	Phe	Ala
1665			1670						1675			1680			
Tyr	Val	Lys	Trp	Glu	Ala	Gly	Ile	Asp	Asp	Met	Phe	Asn	Phe	Gln	Thr
			1685						1690			1695			
Phe	Ala	Asn	Ser	Met	Leu	Cys	Leu	Phe	Gln	Ile	Thr	Thr	Ser	Ala	Gly
			1700			1705						1710			
Trp	Asp	Gly	Leu	Leu	Ser	Pro	Ile	Leu	Asn	Thr	Gly	Pro	Pro	Tyr	Cys
1715						1720						1725			
Asp	Pro	Thr	Leu	Pro	Asn	Ser	Asn	Gly	Ser	Arg	Gly	Asp	Cys	Gly	Ser
1730						1735			1740						
Pro	Ala	Val	Gly	Ile	Leu	Phe	Phe	Thr	Thr	Tyr	Ile	Ile	Ile	Ser	Phe
1745			1750						1755			1760			
Leu	Ile	Val	Val	Asn	Met	Tyr	Ile	Ala	Ile	Ile	Leu	Glu	Asn	Phe	Ser
			1765						1770			1775			
Val	Ala	Thr	Glu	Glu	Ser	Thr	Glu	Pro	Leu	Ser	Glu	Asp	Asp	Phe	Asp
			1780			1785						1790			
Met	Phe	Tyr	Glu	Ile	Trp	Glu	Lys	Phe	Asp	Pro	Glu	Ala	Thr	Gln	Phe
1795						1800						1805			

Ile Glu Tyr Ser Val Leu Ser Asp Phe Ala Asp Ala Leu Ser Glu Pro
 1810 1815 1820
 Leu Arg Ile Ala Lys Pro Asn Gln Ile Ser Leu Ile Asn Met Asp Leu
 1825 1830 1835 1840
 Pro Met Val Ser Gly Asp Arg Ile His Cys Met Asp Ile Leu Phe Ala
 1845 1850 1855
 Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Lys
 1860 1865 1870
 Ile Gln Met Glu Glu Lys Phe Met Ala Ala Asn Pro Ser Lys Ile Ser
 1875 1880 1885
 Tyr Glu Pro Ile Thr Thr Thr Leu Arg Arg Lys His Glu Glu Val Ser
 1890 1895 1900
 Ala Met Val Ile Gln Arg Ala Phe Arg Arg His Leu Leu Gln Arg Ser
 1905 1910 1915 1920
 Leu Lys His Ala Ser Phe Leu Phe Arg Gln Gln Ala Gly Ser Gly Leu
 1925 1930 1935
 Ser Glu Glu Asp Ala Pro Glu Arg Glu Gly Leu Ile Ala Tyr Val Met
 1940 1945 1950
 Ser Glu Asn Phe Ser Arg Pro Leu Gly Pro Pro Ser Ser Ser Ser Ile
 1955 1960 1965
 Ser Ser Thr Ser Phe Pro Pro Ser Tyr Asp Ser Val Thr Arg Ala Thr
 1970 1975 1980
 Ser Asp Asn Leu Gln Val Arg Gly Ser Asp Tyr Ser His Ser Glu Asp
 1985 1990 1995 2000
 Leu Ala Asp Phe Pro Pro Ser Pro Asp Arg Asp Arg Glu Ser Ile Val
 2005 2010 2015